Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-17. (Cancelled)

18. (Currently amended) A system for controlling an interventional procedure in ~~an~~ a target organ of a patient comprising:

an intervention device ~~comprising~~ that comprises (i) catheters having a plurality of detectable markers provided on a distal portion per catheter, the plurality of detectable markers of the respective distal portions being positioned in a substantially evenly distributed manner within a volume of the target organ, to enable a visualization of a corresponding catheter within the target organ and to be used as features to perform motion correction within the target organ, (ii) a displaceable catheter for performing an intervention of the interventional procedure, the displaceable catheter having a further detectable marker, and (iii) a stereotactic navigation system to position (iii.a) the catheters having the detectable markers and (iii.b) the displaceable catheter having the further detectable marker within the target organ;

an imaging unit arranged to acquire images of the target organ along with (i) the detectable markers and (ii) the further detectable marker of the displaceable catheter for corresponding dwell positions of the displaceable catheter within the target organ;

a computing unit configured to carry out the steps

~~calculating a~~ constructing an internal motion-corrected target organ-oriented three-dimensional coordinate system based on the detectable markers within the images being used as the features on which to base motion correction;

generating a spatial roadmap representing an envisaged trajectory of the displaceable catheter within the motion-corrected target organ-oriented three-dimensional coordinate system by (i) interrelating the spatial positions of the detectable

markers within the motion-corrected target organ-oriented three-dimensional coordinate system and (ii) using supplementary information, wherein the supplementary information for generating the spatial roadmap includes measured temporal electrical activity of the organ and related time moments of the measured temporal electrical activity of different points of a measurement of temporal electrical activity, wherein a pattern of contraction of the target organ is derived and irregularities in a conductivity of electrical signals are identified, further wherein the derived pattern of organ contraction and the identified irregularities are used as the supplementary information for generating the spatial roadmap;

monitoring the spatial position of the displaceable catheter within the motion-corrected target organ-oriented three-dimensional coordinate system via the further detectable marker;

determining a discrepancy between the spatial position of the displaceable catheter and the spatial roadmap and calculating a navigational correction; and

controlling the navigation system to apply the navigational correction to the position of the displaceable catheter within the motion-corrected target organ-oriented three-dimensional coordinate system; and

a user interface arranged to display

images of (i) the target organ, (ii) the spatial position of the detectable markers, (iii) the spatial position of the further detectable marker of the displaceable catheter, and (iv) the spatial roadmap; and

a control screen displaying the correction to be applied to the navigation system and accepting interactive user input for the correction.

19. (Previously presented) The system of claim 18, further comprising the computing unit configured to carry out the steps:

monitoring the spatial position of the detectable markers;

determining a displacement of a detectable marker;

recalculating the roadmap based on the displacement; and

sending a signal to the navigation system to automatically position the displaceable catheter.

20. (Previously presented) The system of claim 18, further comprising an imaging unit arranged to acquire high resolution images.

21. (Previously presented) The system of claim 18, further comprising the imaging unit employing an X-ray beam or magnetic resonance acquisition.

22. (Previously presented) The system of claim 18, further comprising an imaging unit arranged to acquire images by rotational scan of an X-ray source around the target organ.

23. (Previously presented) The system of claim 18, the intervention device further comprising a catheter adapted to measure cardiac action potentials within the target organ.

24. (Previously presented) The system of claim 18, wherein the roadmap is arranged to represent a burning path for an ablating catheter.

25. (Previously presented) The system of claim 18, further comprising sending a signal to warn the operator of a change in configuration of the detectable markers.

26. (Previously presented) The system of claim 18, further comprising the user interface arranged to display actual electrical activity of tissue of the target organ.

27. (Currently amended) A method for controlling an interventional procedure in ~~an~~ a target organ of a patient, the method comprising:

providing an intervention device ~~comprising~~ that comprises (i) catheters having a plurality of detectable markers provided on a distal portion per catheter, the plurality of detectable markers of the respective distal portions being positioned in a substantially evenly distributed manner within a volume of the target organ, to enable a visualization of a corresponding catheter within the target organ and to be used as features to perform motion correction within the target organ, (ii) a displaceable catheter for performing an intervention of the interventional procedure, the displaceable catheter having a further detectable marker, and (iii) a stereotactic navigation system to position (iii.a) the catheters having the detectable markers and (iii.b) the displaceable catheter having the further detectable marker within the target organ;

providing an imaging unit arranged to acquire images of the target organ along with (i) the detectable markers and (ii) the further detectable marker of the displaceable catheter for corresponding dwell positions of the displaceable catheter within the target organ;

providing a computing unit configured to carry out the steps

~~calculating a~~ constructing an internal motion-corrected target organ-oriented three-dimensional coordinate system based on the detectable markers within the images being used as the features on which to base motion correction;

generating a spatial roadmap representing an envisaged trajectory of the displaceable catheter within the motion-corrected target organ-oriented three-dimensional coordinate system by (i) interrelating the spatial positions of the detectable markers within the motion-corrected target organ-oriented three-dimensional coordinate system and (ii) using supplementary information, wherein the supplementary information for generating the spatial roadmap includes measured temporal electrical activity of the organ and related time moments of the measured temporal electrical activity of different points of a measurement of temporal electrical activity, wherein a pattern of contraction of the target organ is derived and irregularities in a conductivity of

electrical signals are identified, further wherein the derived pattern of organ contraction and the identified irregularities are used as the supplementary information for generating the spatial roadmap;

monitoring the spatial position of the displaceable catheter within the motion-corrected target organ-oriented three-dimensional coordinate system via the further detectable marker;

determining a discrepancy between the spatial position of the displaceable catheter and the spatial roadmap and calculating a navigational correction; and

controlling the navigation system to apply the navigational correction to the position of the displaceable catheter within the motion-corrected target organ-oriented three-dimensional coordinate system; and

providing a user interface arranged to display

images of (i) the target organ, (ii) the spatial position of the detectable markers, (iii) the spatial position of the further detectable marker of the displaceable catheter, and (iv) the spatial roadmap; and

a control screen displaying the correction to be applied to the navigation system and accepting interactive user input for the correction.

28. (Previously presented) The method of claim 27, further comprising providing a computing unit configured to carry out the steps:

monitoring the spatial position of the detectable markers;

determining a displacement of a detectable marker;

recalculating the roadmap based on the displacement; and

sending a signal to the navigation system to automatically position the displaceable catheter.

29. (Previously presented) The method of claim 27, further comprising providing an imaging unit arranged to acquire high resolution images.

30. (Previously presented) The method of claim 27, further comprising providing an imaging unit employing an X-ray beam or magnetic resonance acquisition.

31. (Previously presented) The method of claim 27, further comprising providing an imaging unit arranged to acquire images by rotational scan of an X-ray source around the target organ.

32. (Previously presented) The method of claim 27, further comprising providing an intervention device with a catheter adapted to measure cardiac action potentials within the target organ.

33. (Previously presented) The method of claim 27, further comprising generating a spatial roadmap arranged to represent a burning path for an ablating catheter.

34. (Previously presented) The method of claim 27, further comprising sending a signal to warn the operator of a change in configuration of the detectable markers.

35. (Previously presented) The method of claim 27, further comprising providing a user interface arranged to display actual electrical activity of tissue of the target organ.